

# Influenza vaccination coverage estimates and selected related results from a national internet panel survey of health care personnel, United States, November 2010

The Advisory Committee on Immunization Practices recommends that all health care personnel (HCP) be vaccinated annually for influenza.<sup>(1)</sup> However, although influenza vaccination coverage among HCP has increased slowly over the past decade, coverage remained less than 50% until the 2009-10 season, when 62% of U.S. HCP received the trivalent seasonal influenza vaccination (64% received a seasonal and/or pandemic monovalent 2009 H1N1 vaccination).<sup>(2)</sup> The Centers for Disease Control and Prevention (CDC) conducted an internet panel survey of U.S. HCP November 4-16, 2010 to provide mid-season estimates of influenza vaccination coverage and knowledge, attitudes, and behaviors regarding influenza vaccines. A follow-up survey to assess end of season coverage will be conducted in April. This report describes the key findings from this first HCP influenza vaccination survey of the 2010-11 season.

## Key findings

- By mid-November 2010, 55.5% (95% confidence interval [CI] half-width  $\pm 3.4$ ) of HCP received influenza vaccination. [\(Table 1\)](#)
- Overall, 62.0%  $\pm 3.4$  of HCP received or definitely intend to receive influenza vaccination this influenza season.
- Influenza vaccination coverage varied by work setting, ranging from 40% among HCP working in settings other than hospitals, physician's offices, or long-term care facilities, to 68.3% among HCP working in hospitals. [\(Table 1\)](#)
- Vaccination coverage also varied by occupation, ranging from 46.6% among medical technicians, assistants, and aides to 78.0% among physicians, dentists, nurse practitioners, and physician assistants. [\(Table 1\)](#)
- Older HCP are more likely to be vaccinated than younger HCP. [\(Table 1\)](#)
- The most common place of vaccination was at the place of employment; among vaccinated HCP, 78.5% were vaccinated at work. [\(Table 2\)](#)
- Among those already vaccinated, the most frequent reason for vaccination was to protect him/herself from influenza, reported by 85.2% of HCP; 57.7% of HCP reported that they got vaccinated to protect their friends and family, and 37.7% reported that they got vaccinated to protect their patients. [\(Table 2\)](#)
- Among unvaccinated HCP, the most common reason given for non-vaccination was fear of getting sick or experiencing side effects. [\(Table 2\)](#)

**Table 1. Influenza vaccination coverage among U.S. health-care personnel (HCP), November 2010 (n=2,010)**

|  | <b>Un-weighted sample size</b> | <b>Weighted N*</b> | <b>Coverage % (95% CI)†</b> |
|--|--------------------------------|--------------------|-----------------------------|
| <b>Overall</b>   | <b>2,010</b>                   | <b>13,715,041</b>  | <b>55.5 ±3.4</b>            |
| <b>By age group:</b>                                       |                                |                    |                             |
| 18-29 years  | 229                            | 2,649,010          | 45.5 ±8.0                   |
| 30-44 years  | 678                            | 4,792,334          | 51.8 ±5.6                   |
| 45-59 years  | 882                            | 4,820,792          | 58.8 ±5.6                   |
| ≥60 years  | 221                            | 1,452,905          | 75.2 ±9.0                   |
| <b>By work setting:</b>                                    |                                |                    |                             |
| Hospital   | 639                            | 5,012,352          | 68.3 ±5.3                   |
| Physician's office   | 703                            | 2,544,733          | 59.7 ±6.5                   |
| Long-term care facility                                    | 261                            | 2,788,295          | 47.6 ±8.4                   |
| Other§   | 407                            | 3,369,661          | 40.0 ±6.6                   |
| <b>By occupation:</b>                                      |                                |                    |                             |
| Physician/dentist/nurse practitioner/physician's assistant | 541                            | 735,051            | 78.0 ±4.6                   |
| Nurse  | 251                            | 2,451,035          | 61.5 ±8.4                   |
| Allied health professional                                 | 229                            | 1,651,035          | 53.2 ±8.8                   |
| Technician/assistant/aid                                   | 512                            | 3,811,879          | 46.6 ±5.9                   |
| Administrative/non-clinical support                        | 271                            | 2,768,777          | 63.3 ±7.9                   |
| Other occupation   | 206                            | 2,297,078          | 48.6 ±9.3                   |

\*Projected total number of U.S. HCP in this category.

†Shown as ± the half-width of the confidence interval.

§ Settings other than hospitals, physician's offices, or long-term care facilities.

**Table 2. Place of vaccination and main reasons for influenza vaccination (n=1,261) and non-vaccination (n=749) among U.S. health-care personnel (HCP), November 2010**

|  | <b>Un-weighted sample size</b> | <b>Weighted N*</b> | <b>Coverage % (95% CI)†</b> |
|--|--------------------------------|--------------------|-----------------------------|
| <b>Most prevalent place of vaccination (Top 3)</b>                     |                                |                    |                             |
| Work   | 1,019                          | 5,977,133          | 78.5 ±3.5                   |
| Doctor's office  | 96                             | 735,620            | 9.7 ±2.6                    |
| Pharmacy or other store  | 74                             | 495,115            | 6.5 ±2.1                    |
|  |                                |                    |                             |
| <b>Main reasons for vaccination among vaccinated HCP (Top 3)</b>       |                                |                    |                             |
| To protect myself  | 1,089                          | 6,482,794          | 85.2 ±3.2                   |
| To protect my friends and family                                       | 757                            | 4,390,435          | 57.7 ±4.3                   |
| To protect patients  | 586                            | 2,867,835          | 37.7 ±4.2                   |
|  |                                |                    |                             |
| <b>Main reasons for non-vaccination among unvaccinated HCP (Top 3)</b> |                                |                    |                             |
| Might get sick or experience side effects                              | 251                            | 2,067,720          | 33.9 ±5.1                   |
| I don't need it  | 143                            | 1,469,695          | 24.1 ±4.8                   |
| I didn't get around to it/have the time                                | 154                            | 1,117,129          | 18.3 ±3.9                   |
|  |                                |                    |                             |

\*Projected number of vaccinated HCP in the U.S. in this category.

†Shown as ± the half-width of the confidence interval.

## Summary and public health implications

This report shows that estimated influenza vaccination coverage among HCP mid-November of the 2010-11 influenza season was 55.5%. With an additional 6.5% reporting definite intent to be vaccinated, the final season coverage may be 62%, similar to seasonal influenza vaccination coverage among HCP in the 2009-10 season,<sup>(2)</sup> but still well below the Healthy People 2020 target of 90% coverage among HCP.<sup>(3)</sup> Vaccination has been shown to reduce illness and absenteeism caused by influenza, thus helping to ensure an adequate HCP workforce to respond to the increased demand on the health care system during influenza epidemics.

These results suggest that efforts to educate HCP about the safety of the vaccine and the importance of vaccination to prevent influenza for themselves, their friends and families, and their patients should continue. Education targeting younger HCP, those working in non-hospital settings and occupations with lower coverage may be particularly important. Offering vaccination to HCP at workplaces may increase vaccination coverage among this population. The follow-up survey in April 2011 will allow for assessment of influenza vaccination coverage at the end of the influenza season.

## Data source and methods

A web-based questionnaire was administered from November 4 and November 16, 2010 to a sample of eligible HCP members of three online survey panels. The majority of respondents (n=1,080) were recruited from self-identified HCP participating in a nationally representative, online research panel developed and operated by Knowledge Networks, Inc. (KN). The KN panel, KnowledgePanel®, has approximately 40,000 U.S. households recruited through national random samples using both telephone- and address-based sampling methods. To increase the number of physicians and others employed in low incidence, specialized healthcare occupations, e.g., laboratory technicians and home health aides, the sample was supplemented with 650 members from a specialized opt-in research panel called the Physician Consulting Network (PCN)<sup>™</sup> that represents a wide variety of health care and medical specialties and with an additional 280 cases from Global Market Insite (GMI)<sup>™</sup>, a large opt-in marketing research panel.

Panelists were eligible for inclusion in this study if they: 1) worked as a medical doctor, health technologist, healthcare support staff, or other health practitioner; or 2) worked in a hospital, ambulatory care, nursing and residential care facility or other health-related setting based on corresponding occupation/industry codes. A total of 2,010 respondents, 64% of sampled KN panelists and 39% of sampled PCN panelists, completed the survey questionnaire. A completion rate for GMI respondents was not calculated because the number of eligible opt-in panelists invited to participate was not known.

The survey measured self-reported uptake of seasonal influenza vaccination from August 2010 through the date the survey instrument was completed. As surveys were completed November 4

through November 16, 2010, estimates reported approximate the cumulative proportion of HCP vaccinated by the middle of the interview period (November 10). The questionnaire asked vaccinated respondents to report the location (or place) in which they were vaccinated and to indicate the three main reasons for being vaccinated. The questionnaire asked unvaccinated respondents to indicate the three main reasons for not being vaccinated and whether they intended to be vaccinated during the remainder of the vaccination season. The projected HCP vaccination level for the 2010-11 season was calculated based on actual vaccination as reported and a “definite” intention of being vaccinated by March 2011.

Using the demographic and attitudinal characteristics of KN panel members as a benchmark, the total sample from all three sources was combined and weighted to be nationally representative of the population of U.S. HCP. The estimates of the number of HCP shown in Tables 1 and 2 are based on population weights derived from Knowledge Panel HCP members applied to the U.S. population estimate from the Current Population Survey. The RAND Corporation’s Institutional Reviewed Board approved the study design and survey protocols.

## References

1. CDC. Influenza vaccination of health care personnel: recommendations of the Healthcare Infection Control Advisory Committee (HICPAC) and the Advisory Committee Practices (ACIP). MMWR 2006;55(RR-2).
2. CDC. Interim results: Influenza A (H1N1) 2009 monovalent and seasonal influenza vaccination coverage among health-care personnel—United States, August 2009-January 2010. MMWR 2010;59 (12):357-62.
3. Healthy People 2020.  
<http://healthypeople.gov/2020/topicsobjectives2020/objectiveslist.aspx?topicid=23>. (Accessed December 2, 2010.)